UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,241	11/26/2003	Stephen C. Olson	02243-039001	6105

7590 05/03/2006

Phyllis K. Kristal
Fish & Richardson P.C.
1425 K Street, N.W.
Washington, DC 20005-3500

EXAMINER	
PAHNG, JASON Y	

ART UNIT	PAPER NUMBER
3725	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/721,241	OLSON, STEPHEN C.	
	Examiner	Art Unit	
	Jason Y. Pahng	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-29 and 50-74* is/are pending in the application.

4a) Of the above claim(s) *55-74* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-29 and 50-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 14, 2006 has been entered.

Election/Restrictions

Applicant alleges that Examiner has not clearly identified how claims 16 and 55 are distinct from one another. The following is a clear identification of how claims 16 and 55 are distinct from one another.

Invention of Group I (claims 16-29 and 50-54) and Group II (55-74 are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed as evidenced by claim 16. For example, claim 16 does not require a feed inlet including a gas inlet bore and a material funnel as required by claim 55. The

subcombination has separate utility such as it can obviously be used in any fluid energy mill and is not limited to the particular fluid energy mill of Group I.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claim 25 is objected to because of the following informalities: The phrase "is oriented at an angle to a horizontal with respect" appears grammatically incorrect. A noun seems missing. The word horizontal is not a noun. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16, 19-21, 25-27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Trost (US 3,229,918).

With regard to claim 16, Trost discloses a fluid energy mill including:

1. a monolithic manifold (11) having a front face (Figure 4) and a rear face (Figure 9);

2. the monolithic manifold (11) including a grinding chamber formed in the front face (Figures 1-3);
3. a feed inlet (22 and 23 of Figure 4) formed in the manifold (11);
4. a gas inlet (21 of Figure 4) formed in the manifold (11);
5. an outlet (29) formed in the rear face; and
6. a cover (84 of Figure 2).

With regard to claim 19, Trost discloses a cycloid-shaped grinding chamber (44, Figure 1).

With regard to claim 20, Trost discloses a protective pocket (46, Figure 1).

With regard to claim 21, Trost discloses a barrier (near the reference number 55 in Figure 1) at a region where the material enters the grinding chamber.

With regard to claims 25 and 26, as well as can be understood, Trost discloses the feed inlet (22 and 23 of Figure 4) oriented at an angle of 30 degrees or more to a horizontal with respect to an upper surface of the monolithic manifold (11).

With regard to claim 27, Trost discloses a feed inlet (46) positioned tangent to a second radius (8 o'clock direction, Figure 1) larger that a first radius (6 o'clock direction, Figure 1).

With regard to claim 29, Trost discloses an outlet (29) positioned near the center.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Coombe et al. (US 3,840,188). Trost discloses a non-circular seal (87), but does not disclose a groove. In a closely related art, Coombe discloses a fluid energy mill with a groove for a seal in order to improve sealing. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a groove for a seal in order to improve sealing, as taught by Coombe.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Trost (US 2,704,635). Trost ('918) discloses a fluid energy mill including:

1. a manifold (11) having a front face and a rear face;
2. the manifold including a grinding chamber (44) and a feed inlet including a feed gas inlet (78) and a material funnel (74);
3. the manifold including a gas inlet (79) and an outlet (35) formed in the rear face; and
4. a cover (84).

As for the manifold (11) being monolithic and including a feed gas inlet and a material funnel, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the feed inlet in one piece and include a feed gas inlet and a material funnel, since it has been held that forming in one piece an article

which has formerly been formed in two pieces and put together involves only routine skill in the two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works, 150 U.S. 164 (1893).* Furthermore, this is particularly true in the fluid energy mill art. It is well known in the art to form in one piece an article which has formerly been formed in two pieces. For example, Trost ('918) uses many parts which have formerly been formed in multiple pieces as shown in Trost ('635) in order to simplify the manufacturing process. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost ('918) with a feed inlet in one piece and include a feed gas inlet and a material funnel in order to simplify the manufacturing process, as taught by Trost ('918) and Trost ('635).

Claims 23, 24, and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Trost (US 2,704,635) as applied above, further in view of Fay (US 3,559,895).

Claim 23 calls for an intersection of the feed gas inlet and the material funnel to form an elliptical hole. In a closely related art, Fay discloses a fluid energy mill with an elliptical hole (Figure 11) in order to accommodate a slanted hopper (77). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with an elliptical hole in order to accommodate a slanted hopper, as taught by Fay.

Claims 24 and 50 call for a ventrui formed in a position between the grinding chamber and the feed gas inlet. Fay discloses a venturi (76, Figure 11) in order to provide a diverging nozzle position between a grinding chamber and a feed gas inlet.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a venturi in order to provide a diverging nozzle position between a grinding chamber and a feed gas inlet, as taught by Fay.

Claims 51-54 call for a pair of nozzles with an outlet formed in positions adjacent to the grinding chamber. Fay discloses a pair of nozzles (88, Figure 13) with an outlet formed in positions adjacent to the grinding chamber in order to supply additional grinding fluid. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a pair of nozzles with an outlet formed in positions adjacent to the grinding chamber in order to supply additional grinding fluid, as taught by Fay.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trost (US 3,229,918) in view of Andrews (US 2,032,827). Claim 28 calls for a gas to enter the grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than the first radius. Andrews discloses a gas entering (25) a grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than a first radius (Figure 1) in order to provide both a forward tangential component and inward component (page 5, lines 25-35) to create high velocity vortex. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide Trost with a gas entering a grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than a first radius, in order to provide both a forward tangential component and inward component to create high velocity vortex, as taught by Andrews.

Response to Arguments

Applicant's arguments filed April 14, 2006 have been fully considered but they are not persuasive.

With regard to claim 16, Applicant argues that Trost ('918) does not disclose a monolithic manifold (11) including a grinding chamber because the classification chamber (44) is formed by a separate piece secured to the manifold (11). However, Trost ('918) discloses a grinding chamber (44) and also another grinding chamber a grinding chamber formed in the front face (Figures 1-3) of the manifold (11). These two grinding chamber are not mutually exclusive. Trost ('918), in fact, discloses a monolithic manifold (11) including a grinding chamber as discussed above in the claim rejections under 35 U.S.C. 102.

With regard to claim 16, Applicant also argues that Trost ('918) does not disclose a monolithic manifold (11) including a feed inlet because hopper (74) and nozzle (78) are separate elements from the monolithic body member (11). However, hopper (74) and nozzle (78) are not relied upon in the rejection of claim 16. Therefore, the argument that hopper (74) and nozzle (78) are separate elements from the monolithic body member (11) is not germane to the rejection of claim 16. In fact, Trost ('918) discloses a monolithic manifold including a feed inlet as discussed above in the claim rejections under 35 U.S.C. 102.

With regard to claim 16, Applicant additionally argues that Trost ('918) does not disclose a monolithic manifold (11) including a gas inlet because nozzle (79) are

separate element from the monolithic body member (11). However, nozzle (79) is not relied upon in the rejection of claim 16. Therefore, the argument that the nozzle (79) is separate elements from the monolithic body member (11) is not germane to the rejection of claim 16. In fact, Trost ('918) discloses a monolithic manifold including a gas inlet as discussed above in the claim rejections under 35 U.S.C. 102.

With regard to the rest of the claims, Applicant has not presented any additional arguments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Y. Pahng whose telephone number is 571 272 4522. The examiner can normally be reached on 9:00 AM - 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571 272 4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JYP

DERRIS H. BANKS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700